

CLAIMS

1. The method for stabilizing operation point and optical output of external optical modulator including light source, external optical modulator modulating the light from the light source, optical detector detecting the output-
5 light from the said external optical modulator, and the means of regulating direct current bias applied to the said external optical modulator, which regulates the direct current bias determining the operation point of modulation curve of the said external optical modulator, according to the output of the said optical detector, wherein;

10 low-frequency signal, which is frequency below the lower limit of the signal frequency band of input signal inputted to the said external optical modulator, is superimposed onto the said direct current bias,

and the low-frequency component included in the output of the said optical detector is extracted,

15 and the output of the said low-frequency component is normalized on the basis of the said low-frequency signal,

and the output-light of light source is controlled in accordance with the said normalized low-frequency component.

2. The method for stabilizing operation point and optical output of
20 external optical modulator, as claimed in claim 1, wherein;

the means of controlling optical output of light source is equipped, which, in control of the output-light of the said light source, detects the output-light from the said light source, compares the value of said detection to the standard value

of primary optical output determining primary optical output, and adjusts the output-light of the said light source,

and the said standard value of primary optical output is modified according to the ratio of the primary value of the said normalized low-frequency component to the subsequent value,

and the said means of controlling optical output of light source is operated on the basis of the said modified standard value.

3. The method for stabilizing operation point and optical output of external optical modulator, as claimed in claim 1, wherein;

in control of the output-light of the said light source, the output-light of light source is controlled in order that the primary value of the said normalized low-frequency component may accord with the subsequent value.

4. The device for stabilizing operation point and optical output of external optical modulator, which utilizes the method for stabilizing operation point and optical output of external optical modulator, as claimed in claim 1 to 3.

5. The device for stabilizing operation point and optical output of external optical modulator, as claimed in claim 4, wherein;

the said optical detector is photodiode that is incorporated into the module including external optical modulator.

6. The device for stabilizing operation point and optical output of external optical modulator, as claimed in claim 4 and 5, wherein;

the said means of regulating direct current bias has averaging circuit for obtaining the mean value of output of the said external optical detector, and regulates the

direct current bias applied to external optical modulator in accordance with the value of the said averaging circuit.

7. The device for stabilizing operation point and optical output of external optical modulator, as claimed in claim 4 to 6, wherein;

5 low-pass filter or band-pass filter is used in order to extract the low-frequency component included in the output of the said optical detector.

8. The device for stabilizing operation point and optical output of external optical modulator, as claimed in claim 4 to 7, wherein;

the said means of regulating direct current bias has slope-selecting means which,
10 in fixing the operation point of modulation curve of the said external optical modulator, enables the selection of slope of the said modulation curve.

9. The device for stabilizing operation point and optical output of external optical modulator, as claimed in claim 4 to 8, wherein;

the said light source is laser diode.